MISSOURI BOTANICAL GARDEN

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COVER: *Camellia japonica* "Mathotiana"—many such perfect blooms as this, in white, red, delicate pink and variegated can be seen in the Linnaean House, where every year in Mid-winter the Camellias present one of the finest shows at the Garden. Photo by Paul A. Kohl.

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Missouri Botanical Garden Bulletin

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THE MAUSOLEUM GROUNDS COME TO LIFE

THE Snowdrop or Galanthus (Greek for milk flower), considered a harbinger of Spring, has been flowering in the Mausoleum enclosure at the Garden since the last of January. Snowdrops are Spring-flowering bulbs (there are a few autumnal kinds rarely seen in American gardens) belonging to the Amaryllis Family. The genus has twenty-two or more species and named varieties, all native to the Old World. Of the species represented in mass here, the first-blooming are the tetraploid varieties of *Galanthus elwesii*. The later ones are the diploid *G. nivalis*. The Garden has numerous other varieties and species that, so far as we know, make up the most complete collection in America. The normal flowering period for these early-blooming bulbs is from late January to early March when they are frequently seen nodding above the snow. They thrive best in dry leafmold and seem happiest under a cover of Ivy. New introductions and transplantings of Galanthus, unlike those of most other plants, should be made while the bulbs are in full flower, for then the bulbs are dormant.

These hardy little flowers herald the arrival of longer days and of numerous other perennials, among the first being Aconitum or Monkshood, a member of the Buttercup family. Following closely and blooming with these earliest plants are Crocus, Muscari the Grape Hyacinth, Daffodils, Jonquils and Scillas, the English Bluebells or Wood Hyacinths. This last group is made up of *Scilla nutans, Scilla campanulata* and their hybrids. This is no doubt the finest collection in the New World, with color varieties of dark, light, and pale blue, deep pink, gray-pink as well as white and cream—an outstanding collection with many self-sown hybrids which occurred right there! Scillas also love the ivy cover.

The many tall, ivied oaks, the sassafras and other trees and shrubs in and surrounding the fenced enclosure where Mr. Shaw is buried, preserve a quiet, shaded, but living mausoleum for the Garden's founder (indeed, like no other place in the United States, it resembles the private burial grounds of English gentlemen).

Since lawn grasses will not grow satisfactorily in the shaded area, many different kinds of evergreen ground-covers have been planted in sizeable groupings forming a mosaic or patchwork pattern. The patches consist of Rumanian and Bulgarian Ivy (the first large plantings made in the United States), Myrtle or Periwinkle *(Vinca Minor)*, Pachystima *(Pachystima Can-*

byi), Purple-leaf Winter-Creeper *(Euonymous fortunei reticulatus)* and Liriopes of many kinds. The Liriopes or Lily-Turfs are represented by eight species or varieties (the first big trial of these in Northern gardens), each demonstrating a remarkable type of cover for densely-shaded locations. *Liriope muscariodes*, not as widely known as the other species, is by far the best for St. Louis gardens. In early May the pale lavender flowering spikes of the native Ozark Wild Hyacinth, *Camassia scilloides*, will super-carpet the area. While the life on the Mausoleum floor begins early and changes rapidly so does that of the trees above. The small, yellow flowers of the Sassafras *(Sassafras albidum)* appearing before the leaves, are among the earliest of flowers. The flowering Dogwood *(Cornus florida)* and many early azaleas are some of the more showy shrubs adding a temporary brightness to what one might suppose a sombre atmosphere. —E.L.E.

Wood Hyacinths in the Mausoleum grove.

INSIDE A MISSOURI BALD CYPRESS SWAMP

JULIAN A. STEYERMARK

THE extraordinary beauty and majestic stature of Bald Cypress *(Taxodium distichum)* can be seen to great advantage in old trees at the Missouri Botanical Garden and Tower Grove Park in St. Louis. The natural distribution of the species in Missouri is confined to the southeastern lowland section of the state, reaching its northernmost limits there in Cape Girardeau, Bollinger, Wayne, and Ripley counties.

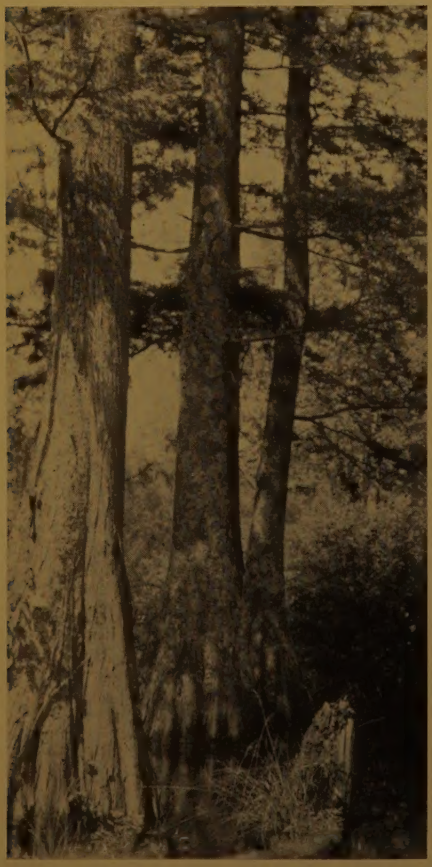
Natural stands of Bald Cypress were formerly much more abundant. Today, after decades of heavy lumbering over a large area, these beautiful trees have become much less frequent, and are now found only in scattered patches. Clearing of the land for cotton, soybean, and watermelon has left millions of acres of bare soil where once stood tall forests of these trees. Although some Bald Cypress may be found at the Big Tree State Park in Mississippi County, an effort should be made to preserve for posterity some remaining stands of this species before it becomes destroyed and exterminated from the relatively few remaining sites in the "boot-heel" section.

Many people, undoubtedly, have seen Bald Cypress in southeastern Missouri while driving along some of the highways. Good examples of these trees in their natural habitat are familiar to those traveling south of Advance on highway 25, or when crossing the St. Francis River on either highway 25 northwest of Cardwell in Dunklin County or highway 53 at the border of Dunklin and Butler counties. There are still many sections of the St. Francis River bottoms as well as other areas away from the more frequented highways which display magnificent stands of Bald Cypress, and some individual trees have been left standing after heavy lumbering or clearing of areas for agricultural purposes.

Inasmuch as most people are not familiar with the interior of an unspoiled cypress swamp, it may be of some value here to describe such an area. During the spring and early summer months the undrained virgin Bald Cypress swamps (see photo) are usually so full of water that it is virtually impossible, unless one has a small boat, to get around inside. Also, at that time of year the hordes of mosquitoes are so thick and annoying that one does not usually wish to remain for any length of time in such a place. However, if one can brave the mosquitoes for a while, many very interesting aquatic plants may be seen there. Of plants floating on the water, probably the most peculiar is the Water Violet *(Hottonia inflata)* with hollow, pale-green, leafless flowering stems rising above the water-surface. Bright masses of yellow flowers covering the water are those of Yellow Water Crowfoot *(Ranunculus flabellaris)* with submerged finely-cut leaves. Other submerged lace-like foliage in the swampy waters belongs to Lake Cress *(Armoracia aquatica)* and Mermaid Weed *(Proserpinaca palustris)*. If the surface of the water has a thin pale-green covering it is due to the floating col-

onies of Duckweed *(Lemna* spp.), Watermeal *(Wolffia* spp.), and Waterflaxseed *(Spirodela polyrhiza)*. Patches of green in the water may be due to the slender stems and submerged needle-like leaves (beneath the floating broader ones) of the Water Starwort *(Callitriche heterophylla)*. Swamp Dock *(Rumex verticillatus)* is prominent in the water with its tall green stems of whorled greenish flowers raised above a cluster of smooth, flat, mostly upright leaf-blades.

With the approach of autumn and the gradual drying-up of the swamp, it becomes more hospitable with a less bothersome mosquito population. The ground is then dried sufficiently to permit foot navigation, and a more detailed investigation can be made of the vegetation. Upon entering such a swamp in the late summer, one is immediately impressed by two things: 1) the great size and stature of the trees, and 2) the swollen or buttressed bases (see photos) of the trunks of the Bald Cypress and Swamp Tupelo *(Nyssa aquatica)*. One is also struck



Bald Cypress trees. Note "knee" projecting from water. Photo by author.

Buttressed trunks of Swamp Tupelo. Photo by author.

by the great thickness and height of the vines. Here are high-climbing woody vines of Trumpet Creeper *(Campsis radicans)* and its relative, the Cross-vine *(Bignonia capreolata)*; Grape *(Vitis cinerea, V. rotundifolia,* and *V. palmata)*; Poison Ivy *(Rhus radicans)*; Ladies'-eardrops *(Brunnichia cirrhosa)*; Wisteria *(Wisteria macrostachya)*; Raccoon Grape *(Ampelopsis cordata)*; Pepper-vine *(Ampelopsis arborea)*; Virginia Creeper *(Parthenocissus quinquefolia)*; and Supple-Jack or Rattan Vine *(Berchemia scandens)*. Usually the trees are so tall that one sees only their bare trunks extending for some distance up to the first leafy limb, which often makes it difficult to identify them. With patience, however, one learns to distinguish a large variety of trees. There are a number of large-sized oaks, including Over-cup *(Quercus lyrata)*, Mossy-cup *(Q. macrocarpa)*, Swamp-White *(Q. bicolor)*, Basket *(Q. Mixhauxii)*, Pin *(Q. palustris)*, Willow *(Q. Phellos)*, and Water *(Q. nigra)*. Sycamore is common, as are also Pumpkin Ash *(Fraxinus tomentosa)*, Red Maple *(Acer rubrum* var. *Drummondii)*, Water Locust *(Gleditsia aquatica)*, Hackberry *(Celtis laevigata)*, Water Hickory *(Carya aquatica)*, and Pecan *(Carya illinoensis)*.

Among the smaller trees, Water Elm *(Planera aquatica)* with its flaky bark, and Persimmon *(Diospyros virginiana)* with bark checked like that of an alligator skin may be recognized.

As one walks around in such a swamp, one sees a number of interesting shrubs, many of them to be found only in this section of the state. Among these should be mentioned Water Willow *(Itea virginica)*, Storax *(Styrax americana)*, Stiff Dogwood *(Cornus foemina)*, Swamp Rose *(Rosa palustris)*, Swamp Privet *(Forestiera acuminata)*, and Button Bush *(Cephalanthus occidentalis* var. *pubescens)*, an especially common shrub.

The great height of the trees combined with the abundance of vines produces a dense shade and one soon becomes enveloped in this relatively dark interior where a sombre silence prevails. Where in the rainy periods of spring and early summer lay endless expanses of dark silent water of uncertain depth, now in late summer and autumn the ground has become covered with herbaceous plants whose period of growth started when the waters receded. Myriads of ground plants are now evident. Bugle Weed *(Lycopus rubellus* var. *arkansanus)* with pairs of narrow, slightly toothed dark green leaves and little clusters of white flowers pegged along the stem; Marsh St. John's-wort *(Hypericum tubulosum* var. *Walteri)* with pairs of thin gray-green leaves; colonies of the fragrant-leaved Lizard's-tail *(Saururus cernuus)*, the closest relative in Missouri to the tropical Black Pepper family; Blue Mist flower *(Eupatorium coelestinum)* with clusters of blue-lavender Ageratum-like flowers; sprawling mats of the climbing white-flowered composite *(Mikania scandens)*; and various grasses *(Paspalum fluitans, Cinna arundinacea,* and species of Panicum*)*, and sedges *(Cyperus strigosus, Rhynchospora corniculata,* and species of Scirpus*)*—are all commonly encountered. In addition, there are usu-

ally present other kinds of herbaceous plants, such as False Loosestrife *(Ludwigia glandulosa)*, False Pimpernel *(Lindernia dubia)*, Water-willow *(Dianthera ovata)*, Loosestrife *(Lysimachia radicans)*, Buttonweed *(Dioda virginiana)*, Eryngo *(Eryngium prostratum)*, and Beggar-ticks *(Bidens discoidea)*. The latter often seeds itself on floating logs, living or dead tree trunks, or old stumps, and may, thus, appear several feet above the general ground level. Various kinds of mosses and liverworts clothe the bases of living tree trunks, while others are found on floating logs and decayed stumps. A beautiful, lacy, dark green liverwort *(Porella* spp.*)*, is commonly found attached to and encircling the base of trees, usually above the high water level of flood stage.

The "knees" of the Bald Cypress are conspicuous in the swamps. They vary in prominence from small, short stubs to elongated, stalagmite-like pale brown growths protruding above the ground-surface. They are thought to help facilitate the conduction of oxygen to the tree when the roots are submerged for extensive periods of time.

There are many other herbaceous plants in addition to those mentioned here that may be found within the interior of a Bald Cypress swamp, but the brief statements made in the preceding paragraphs will give us some idea of the principal plants to be encountered.

A SATURDAY AFTERNOON WITH EPIDENDRUMS

One of the bright little orchids in the Garden's collection which has always interested me is *Epidendrum Obrienianum* (a hybrid between *E. evectum* and *E. radicans*). The brilliant orange-red flowers are seldom as large as your thumb nail but they are borne in little bunches at the ends of long bamboo-like wands and they flower almost continuously. In the Los Angeles area they are grown along the patio fence and many beginners with orchids have a soft spot for them because they give so much bloom for so little trouble. If the whole flower cluster is cut without too long a stem, they last amazingly long as cut flowers; I have frequently had three or four bunches of them in a little brass vase on the mantlepiece flowering away for several weeks or a month.

In California these ever-ready Epidendrums are beginning to interest some amateurs and a few professionals. At the first World Orchid Congress (held at the Garden in October of 1954) there was a nice display of selected varieties in red, orange, pink, yellow and intermediate shades. They should ultimately serve as the basis for a set of easy-to-grow, interesting orchids for the small greenhouse or even for the beginner's sun porch.

During my first week in Medellin, Colombia, I was driven over the main ridge of the Central Cordillera which forms a thousand-foot-high wall along the west edge of the mountain valley in which the city is located. At several places along the road I noticed clumps of bright little Epidendrums, closely related to *E. Obrienianum*. A

week later a car was again available on Saturday afternoon (it never pays to study corn *ALL* the time) and so I was driven up the winding black-top road which connects Medellin with the old city of Antiochia.

As one rises above the city there are wider and wider views across the valley with the city now filling the flat central floor, its suburbs spreading up towards the sides and the ends. The road is lined with modern week-end estates of the well-to-do, covered with flowering vines and surrounded by orchards and gardens. The most ambitious of these estates have a five- or six-room house for the *major domo* in addition to the owner's home, and scattered here and there one or two tiny homes for the workmen. It was in this suburban zone that I came upon the first of the three kinds of Epidendrums which grow along the road. They were growing like weeds in the roadside banks in gravelly soil in full sunshine. This first kind had orange-red flowers, some with tiny dots of deep red, on plants which were, for the most part, only two or three feet high at the most (though this figure doesn't mean very much because the roadsides are so frequently cut or grazed or tramped over). No wonder these orchids will put up with such a variety of conditions! They have been bred as weeds; they really are weeds, or at least common roadside plants in the places where they grow.

Five miles above, at the pass over the Cordillera, we came upon another related species. Here the city and its suburbs had been left behind. The bare, steep, pastured peaks rose on either side, only a few of them forested any more, except along the watercourses. Here, in remnants of the original woods intermixed with bright red-purple Melastomes and Angels Trumpets (Datura) of purest white, were some very similar Epidendrums, bright rose-pink in color, smaller flowers, in much larger bunches on much larger plants with wider leaves. Within a mile or two they began to show hybridization with a yellow-flowered species which grows at lower elevations in drier sites (though all of these were growing on the highly disturbed vegetation that had flooded in when the big earth cuts were made a decade or so ago to carry this road across the Andes). The biggest of these hybrid swarms was something to see! Fist-size bunches of bright little flowers hung out away from the slopes on narrow reed-like stems no thicker than a telephone wire. Each plant was of a different shade. There were deep pinks and light pinks and very bright pale pinks. There were deep yellows and light yellows and a dull pinkish-yellow. There were deep creams and pale creams and a lovely pure white, all of them with delicate little fringes on the lip and varying amazingly in the technical details of their spottings and rumplings when looked at through the hand lens. I made quite a collection of them and carried them back to my hotel where they are now effectively pickled for further study in small bottles of the native bay rum (it was Sunday and the laboratory was closed). If all goes well they will be useful material for my Washington University classes next February and March

and then we shall perhaps understand just a little better these sturdy and brilliant little plants.

—Edgar Anderson

(The foregoing article was received from Dr. Edgar Anderson in the fall of 1957 while he was in Colombia making a study of the varieties of corn in Bolivia, Chile, and other parts of South America.)

HORTICULTURE COURSES OFFERED BY THE GARDEN

COURSE III SPRING HORTICULTURE

THE object of this course is to assist beginning gardeners to learn how to propagate plants from seed. Special emphasis is placed on annuals and perennials. Each session will include a lecture period and a practice period. The lecturers will discuss the factors affecting plant growth and the practical means for their control, such as optimum supply of heat, light, moisture, air, fertilizer, lime and mulches; methods of pest and disease control will also be discussed.

Each student will receive seeds and four metal flats and sterilized soil. There will be enough space to grow about 300 to 350 seedlings which, with the flats, may be taken home. Seeds of plants, particularly desired by any student, should be brought to the first session.

The course will be given in the Experimental Greenhouse, Missouri Botanical Garden (enter Cleveland Avenue Gate, 2221 Tower Grove Avenue).

It will be offered in four duplicate sections of five periods each:

Section I meets 9:00 A. M. to 12:00 Noon, Fridays, March 21, 28, April 11, 18, 25.

Section II meets 1:00 to 4:00 P. M., Mondays, March 24, April 7, 14, 21, 28.

Section III meets 1:00 to 4:00 P.M., Wednesday, March 26, April 9, 16, 23, 30.

Section IV meets 7:00 to 10:00 P. M., Tuesdays, March 25, April 8, 15, 22, 29.

Register between February 14 and March 14, 1958. Fee: $15.00.

COURSE IV GROWING ORCHIDS IN THE HOME

The course consists of one full day of instruction and workshop with the following schedule:

10:00 A. M. Topics discussed will include kinds of orchids suitable for home culture (orchids that like St. Louis), the factors influencing their growth and development—light, temperature, etc., and how these conditions can be created in the average home using Wardian case, evaporative dish, artificial light, etc. There will be a demonstration of potting methods and, if time permits, a question and answer period.

12:00 Noon. Lunch. Coffee and soda supplied by the Garden.

1:00 P. M. Examples of growing orchids in unusual containers in the home—baskets, slabs, poles, etc., with demonstration of potting and care.

2:00 P. M. Inspection of Greenhouses.

3:00 P. M. Members of the Orchid Department staff will give individual instructions in potting. Students may take potted plant home.

The course is offered twice—Section I, Saturday, April 19, 1958, at the Orchid Range of the Missouri Botanical Garden Arboretum, Gray Summit, Missouri; and Section II, Saturday, April 26, 1958, at the Missouri Botanical Garden, Flora and Tower Grove Avenues (The Main Gate entrance), St. Louis 10, Missouri.

Register at 2315 Tower Grove, St. Louis 10, Missouri, fee $10.00.

COURSE IN WILDFLOWER IDENTIFICATION FOR FRIENDS OF THE GARDEN

This year the Garden will offer for the first time a series of five workshop sessions on Botany for the busy citizen, open to Friends of the Garden only, free of charge. The workshop will be taught by Dr. Edgar Anderson and his assistants and will be similar to the high school course for amateurs which he taught so long and so successfully at Washington University. It is designed for the person of no specialized botanical training who after his school years discovers he wants to know more about plants. It is essentially a course in how to find your way to the information you need, how to learn about plants from plants, how to learn about Ozark wild flowers as painlessly and effectively as possible, how to learn to know and understand the plants in your garden.

The sessions will meet on Thursdays, April 10, 17, 24 and May 1 and 8, from 8:00 P. M. to 9:00 P. M. Friends of the Garden members who wish to attend must register before April 8, since the class will be limited in size.

BOOK REVIEW

How to Identify Plants. By H. D. Harrington. Illustrated by L. W. Durrell. 203 pp. Sage Books, Denver, 1957. Price $3.00.

TRYING to identify a plant with even the best of the manuals is a difficult task for someone who is not familiar with the terminology and methods used in plant identification. This book is written to teach people how to name plants. It covers briefly most of the steps involved, from collecting and preparing specimens, through the selection and use of the proper flora or manual. There is a simple, illustrated glossary of the terms commonly used in manuals and floras along with some maps helpful in selecting the text to be used. The book is simple, the margins and spacings are ample, and there is considerable repetition.

This is a book of value to beginners who have no one to guide them past the many pitfalls found in the common plant manuals.

—Hugh Cutler

COLD FRAME OR MINIATURE GREENHOUSE FOR SMALL GARDENS

HERE is an easy to make cold frame suitable (1) for starting plants in the Spring before danger of frost is past; (2) for receiving plants from a hot bed or greenhouse, holding them as an intermediate station until they can be planted in position in the garden; (3) for a general storage place for hardy or semi-hardy plants from the garden and (4) for a propagating bed in Spring or Summer for seed and/or cuttings.

For the first three uses select a location affording the maximum amount of winter sun, preferably facing south and protected from the wind. Dig a trench 3 ft. × 6 ft. and 4 to 6 inches deep. The bottom can be filled with loosened earth, sawdust, leafmold or other material for imbedding clumps, pots or flats of plants. The soil removed from the trench can be used to bank against the outside of the frame when it is in place.

MATERIALS NEEDED:

Three boards 1 in. × 12 in. × 6 ft. to be used for the sides; one piece is cut diagonally for the two sloping sides. (Note: actual measurements of dressed lumber run approximately one-fourth inch less than size specified.)

Three boards 1 in. × 12 in. × 3 ft. to be used for the ends.

Seven pieces 1 in. × 2 in. × 6 ft. to be used for the cover frame, the crosspiece, and the cleats (indicated in drawing by broken lines).

Four pieces 1 in. × 1 in. × 6 ft. and four boards ¼ in. × ½ in. × 6 ft. cut to 3-foot lengths to be used in fastening the plastic to cover frame. (The 1 in. × 1 in. stripping should be placed carefully on underside of cover frame to assure snug fit of cover to box.)

Eight 2 in. × 2 in. × ⅝ in. corner irons for bracing cover frame. Three-fourths pound of #7 screws for fastening corner irons in frame.

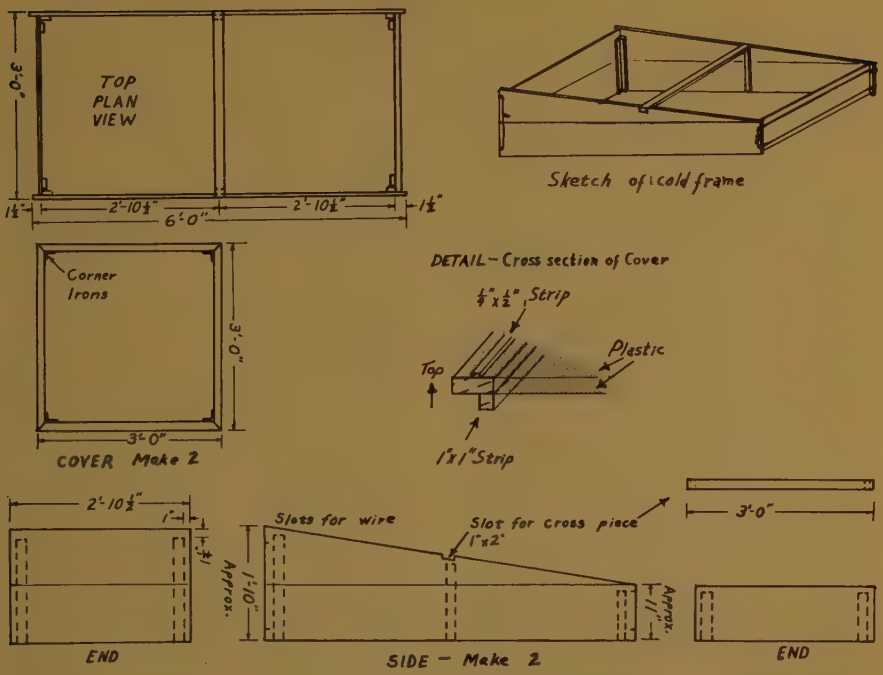
One-fourth pound of #6 aluminum nails for fastening cleats to sides and strips to lower side of cover.

Small brads for strips on upper side of cover. Twenty-five feet of #12 gauge galvanized wire for securing framework of box.

Four pieces of polyflex plastic sheet 3 ft. × 3 ft. for double layers in cover.

The use of Western Red Cedar, California Redwood or Southern Cypress is preferable and will give longer service than other kinds of lumber where wood is in direct contact with soil. If the cold frame is to be painted it should either be treated first with a fungicide or be painted with a fungicidal greenhouse paint.

Proceed by cutting all materials to size and assemble as indicated in drawings. Cleats and all joints should fit snugly to prevent drafts or loss of heat. Saw narrow, 1-inch-deep slots in the ends of the sidepieces and, dividing the wire, run it through the slots binding the two sides together across each end of the frame on the outside (see sketch). The top sashes should



Plan for making unheated portable cold frame which can be disassembled and stored when not in use.

be made to fit snugly into place. They are constructed with two pieces of plastic with a dead-air-space between to provide insulation, preventing loss of heat and the penetration of cold. The design presents a sloping top to give maximum sun exposure and adequate run-off for water. The covers are fastened to the sides with screen-door hooks to prevent their being blown off by wind or moved by animals and at the same time to allow for easy opening.

Plants placed in the cold frame should be soaked well at the start, then watered from time to time when necessary to prevent excessive drying.

This frame when equipped with an electric heating cable and a thermostat can readily serve as a minature greenhouse or hot bed.

—E. L. E.

BIRD NOTE

The Garden is a haven for many wild birds; among the Winter visitors is a small flock of waxwings (probably Cedar Waxwings). The Spring migrations are already bringing many unusual songbirds that add to the pleasures of the keen observer walking in the Garden.

XANTHOCERAS, THE CHINESE BUCKEYE

A Good Shrub for St. Louis Gardens

Should you visit the Garden in the Spring, you may find blooming there a shrub which, while not new, is very interesting and worthy of special attention from garden lovers. It can be located at the turn of the path east of the old Shaw residence and south of the Museum. The plant referred to is *Xanthoceras sorbifolius*, a native of North China. (Xanthoc-eras: Greek for *yellow* and *horn*, referring to the horn-like processes of the floral disk; and sorbifolius: Latin for *leaves like Sorbus*, the Mountain Ash.) A member of Sapindaceae or Soapberry family, this deciduous shrub or small tree, known also as Yellow Horn or the Chinese Buckeye, is related to the Golden Rain Tree *(Koelreuteria paniculata)* and to the Soapberry tree *(Sapindus Drummondii)*, both of which may be found in the Garden. It is a handsome shrub, though of somewhat loose growth habit, attaining a height of 15 feet, with alternate odd-pinnate glossy leaves from 6 to 12 inches long, the many leaflets dark green above and paler beneath. The flowers, about an inch in diameter, are white with a yellow changing to red spot at the base of each petal. They appear in upright racemes 6 to 10 inches long, resembling those of Catalpa or Chestnut. Xanthoceras plants have been growing in the St. Louis area for more than thirty years and are well adapted to the hot dry summers as well as the variable winters. They can be used in a border or as individual specimens.

Propagation from seed is rare since the plant only sets a good crop of fruit once in four or five years and then only a few of the buckeye-like seeds are viable. The squirrels find the seeds delectable which adds a further complication. The plant does not root readily, if at all, from softwood or hardwood cuttings. Root cuttings seem to be the best and most satisfactory means of propagation as the plant spreads naturally by suckering. If three- or four-inch pieces of the heavier roots are placed in a propagating frame in early spring, within four weeks new shoots will appear and shortly thereafter the cuttings should be potted and placed in a warm house until later in spring, when they may be planted in a cold-frame or the nursery, or the individual root cuttings may be placed directly in a six- or eight-inch pot and left there for an entire year. Since Xanthoceras does not stand transplanting very well, a single cutting should be planted in a pot. Continued interest in this shrub will doubtless bring about more efficient means of propagation and perhaps further improvements horticulturally.

—E.L.E.

NOTES

THE Garden and the Henry Shaw School of Botany welcome a new Taxonomist, Dr. Robert L. Dressler, to their staffs. His is the return of a native, so to speak, since Dr. Dressler went from Branson, in the heart of the Missouri Ozarks, to the University of Southern California where he obtained a B.A. degree in Botany. He then did graduate work under Dr. Reed C. Rollins at Harvard University where he completed studies on the genus Pedilanthus for a thesis and received a Ph.D. degree in Botany in 1957. He traveled extensively this past summer in Mexico, mainly in the state of Tamaulipas, making studies and collections of various plants, although he was primarily interested in study material of Poinsettias, other Euphorbias and the various Orchids of the region. Dr. Dressler will conduct classes relating to Plant Taxonomy for the Henry Shaw School of Botany and will also be responsible for taxonomic problems concerning the vast collection of plants that makes up the living display of the plant world which is Shaw's Garden. In addition, he will edit the ANNALS OF THE MISSOURI BOTANICAL GARDEN.

A former graduate student at the Garden, Mr. E. L. Evinger, who received his M.S. degree in the Henry Shaw School of Botany in 1928, has returned as Horticulturist in charge of the introduction and propagation of trees, shrubs and other outdoor plants at the Garden.

Mr. Kenneth Peck, a graduate of Duke University where he obtained his B.A. degree in 1953 and M.A. degree in Plant Ecology in 1954, joined the Garden staff last August filling a new post—that of helping make the Garden more useful and meaningful to its many thousand visitors.

The Friends of the Garden have as their Secretary, Miss Isabella Powell, who is also receptionist at the Main Gate Office.

Dr. Edgar Anderson, Curator of Useful Plants, returned to the Garden late in December and resumed his classes at Washington University at the beginning of the second semester. Last June and July Dr. Anderson participated in emergency teacher training courses for the National Science Foundation at Cornell University, the University of North Carolina, and Allegheny College. In August he was sent to Colombia, South America, by the National Research Council to expedite the work of Colombian and American agronomists who are describing and preserving for future use the varieties of corn in Bolivia, Chile, and other parts of South America. During his time in South America he was flown to Ethiopia by Oklahoma State University (formerly Oklahoma A. and M.) to aid a group of scientists who have established the first Agricultural and Technical School in Ethiopia and have just opened an Imperial Agricultural College there. Dr. Anderson's main job there was to assist in the study of important but little-known crops and to help work out research programs with Coffee, Sorghum and Wheat which would benefit both Ethiopia and the United States. In January he completed this assignment by three days of conferences with plant breed-

ers, directors of research programs and other administrators at Oklahoma State University.

The herbarium assistant at the Garden for the past year, Dr. Alfredo Cocucci, returned in October to the University of Cordoba, in Cordoba, Argentina.

Miss Nell Horner who has been librarian and Editor at the Garden for more than 30 years is now an assistant librarian at the St. Louis University Medical School Library. The many graduate students who had received her help in preparing their theses for publication in the ANNALS of the Garden, presented Miss Horner with a bound volume of letters and a gift of more than $600.00 in token of their friendship and esteem at a party given by Dr. Robert Woodson of the Garden and Dr. Harry Fuller, of the University of Illinois.

Dr. Frederick Meyer, former dendrologist at the Garden has gone to the U. S. Department of Agriculture Plant Introduction Center at Beltsville, Maryland, following an extensive plant-collecting trip last summer in the Mediterranean area of Southern Europe.

Dr Rolla Tryon and his wife, Dr. Alice Tryon, Fern Taxonomists formerly at the Garden, are now at the University of California at Berkeley, California.

During the summer of 1957 a horticulturist from Kew Gardens, England, Mr. Kenneth Beckett, worked for a few months at the Garden, then returned to England in the fall.

Since last January the national office of the Executive Secretary of the American Iris Society, Mr. Clifford Benson, has been located at the Garden in the old Shaw Residence.

The following degrees were awarded in the Henry Shaw School of Botany, June 1957: M.A. in Taxonomy to David Palache Gregory (A.B., Harvard University); M.A. in Taxonomy to Loren I. Nevling (B.S., St. Mary's College); M.A. in Mycology to Joseph A. Zammuto (A.B., Washington University). Robert H. Mohlenbrock, Jr., A.B. and M.S., Southern Illinois University, received the Ph.D. degree in Taxonomy in February 1957.

NATIONAL SCIENCE FOUNDATION SUPPORT FOR GARDEN RESEARCH

The Missouri Botanical Garden has received a grant of $60,000 for support of its herbarium and library facilities. This grant is to be used over a period of two years to pay for personnel, materials and equipment needed to put these research facilities in good working condition. In the herbarium new specimens will be acquired, mounted and added to the reference collection. More space and equipment will be provided for persons using the herbarium. In the library additional personnel will take care of cleaning and shifting books, and preparing them for binding. Books and periodicals will be purchased to fill gaps in our collection. A rare book room will be constructed to house the Garden's valuable pre-Linnaean and Linnaean collections and certain rare and oversize books which are now stored in crowded cases. Additional space, furniture and lighting will be provided so that the library can be used more readily.

The Garden is well-known to botanists throughout the world. Its technical publication, THE ANNALS OF THE MISSOURI BOTANICAL GARDEN, is sent to practically all of the important botanical centers of the world. In exchange and by purchase, the Garden receives more than 500 serials and reports. The National Science Foundation grant is a recognition of the value of the Garden's facilities for basic research in botany.

Although this support has been granted for a short time only, the National Science Foundation has been helping the Garden's research for several years by making grants for specific research projects. At the present time the largest grant to the Garden is one of $17,000 to support the study of evolution in plants directed by Dr. Edgar Anderson. Other grants from the National Science Foundation to the Garden include the following: Dr. Woodson's research project, the Flora of Panama, is aided by a grant of $15,000 over a three-year period to pay for assistants, artist's work and some publication and travel costs. Dr. Cutler's studies on the origins and development of corn and squash are aided by a grant of $4,700 to help pay for travel and an assistant. Small grants have been made the past few years to support the annual Systematics Symposium, a meeting of zoologists and botanists working on the naming of animals and plants.

FRIENDS OF THE GARDEN MEMBERSHIPS

One of the fastest growing things at the Garden today is the number of individuals and firms joining the Friends of the Garden. Back in 1953 when we let St. Louisans know about the increased need for financial aid we had 236 members making annual contributions. Today we have over 2,300. This public confidence in the administration of the Garden is a real inspiration to those of us charged with the responsibility of its future.

Membership in Friends of the Garden has been classified as follows: Annual, $5.00; Contributing, $10.00; Participating, $25.00; Sustaining, $50.00; Supporting, $100.00; and Life, $500.00.

Tell your friends about the various activities at the Garden. If they knew what could be accomplished with additional funds they too, would want to help make this the country's most outstanding Botanical Garden.

"HOLIDAY HISTORIQUE" PROFITS PRESENTED TO GARDEN

At the evening preview of the Annual Orchid Display, Thursday, February 6, Mrs. Arthur J. Kreuger, Treasurer of the Women's Committee for Shaw's Garden presented a check for $4,057.44 to Robert Brookings Smith, newly elected President of the Board of Trustees of the Garden, and Hugh Cutler, Acting Director of the Garden.

This money was raised by the Women's Committee at their fund-raising project, "Holiday Historique" held last fall in the Floral Display House, and will be used to restore and repair walls, fences, and ornamental ironwork in the Garden. The project not only served to raise money for these much-needed

repairs but also brought to the Garden a large number of visitors, some for the first time.

TO BE SEEN AT THE GARDEN

In the Floral Display House.—The Annual Orchid Display opened February 6 and will continue through March 16.

The Annual African Violet Show will be open March 22, 23.

The Easter Show will be held April 5, 6.

The Second Annual Daffodil Show will be held April 13, 14. Entries should be brought to the Display House before 10:00 A. M. Saturday, April 13. For information call Mrs. Grover F. Roennfeldt, PA 1-3645.

In the Linnaean House.—The Camellias (see Cover) have been flowering for over two months and will continue into March.

In the Garden.—Snowdrops and other early Spring flowers (see The Mausoleum Grounds Come to Life, page 1 of this issue), such flowering shrubs as *Hamamelis mollis* in Dr. Anderson's Garden, the many Jonquils and Daffodils which will be at their best in early April, and many more awakening outdoor plants will reward the seeking flower-lover.

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Trifon von Schrenk.....Associate Curator of the Museum
Robert E. Woodson, Jr.....Senior Taxonomist

SOME FACTS ABOUT SHAW'S GARDEN

The Missouri Botanical Garden (the official name chosen by Mr. Shaw) carries on the garden established by Henry Shaw over a century ago at TOWER GROVE, his country home. It is a private institution and has no support from city or state. The old stone walls and cast-iron fences, the Linnaean House, the Museum, the Mausoleum, and the TOWER GROVE mansion all date from Mr. Shaw's time. Since his death, as directed in his will, the Garden has been in the hands of a Board of Trustees who appoint the Director.

The Garden is open every day in the year (except New Year's and Christmas) from nine A. M. until seven P. M. spring to fall and until six in the winter time though the greenhouses close at five. TOWER GROVE, itself, Mr. Shaw's old country home, is open from one until four, admission twenty-five cents, with special guides. The Garden is nearly a mile long and has several entrances. The Main Entrance, the one most used by the general public, is at Tower Grove and Flora Place on the Sarah bus line (No. 42). The Park Southhampton buses (No. 80), direct from downtown, pass within three blocks of this entrance and stop directly across the street from the Administration Building at 2315 Tower Grove Avenue. The latter is the best entrance for students, visiting scientists, etc. It is open to such visitors after 8:30 A. M., but is closed on Saturdays, Sundays, and holidays. The step-in gate (more or less concealed by the big Cleveland Ave. gate, 2221 Tower Grove) is nearly always open, and there is a service entrance on Alfred Avenue, one block south of Shaw Avenue.

Since Mr. Shaw's time an Arboretum has been developed at Gray Summit, Mo., adjacent to State Highways 50 and 66. It is open every day in the year and has auto roads as well as foot trails through the wild-flower reservation. There is a pinetum and an extensive display of daffodils and other narcissi which are at their best in April.